

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

- 1 1. (Currently amended) A method of retrieving and storing quality of service policy
2 management information using a directory service, comprising the steps of:
3 receiving a validity period value of one of a plurality of directory information trees
4 that are created and stored in the directory service in association with a
5 directory information tree manager, wherein the validity period value stores
6 information that defines a time period in which a directory information tree,
7 associated with the validity period value, is valid, and wherein a valid
8 directory information tree cannot be updated or modified;
9 when quality of service policy management information is needed, determining which
10 one of the directory information trees is a currently active directory
11 information tree;
12 retrieving the quality of service policy management information from the currently
13 active directory information tree only during the time period within the
14 validity period value thereof.
- 1 2. (Original) A method as recited in Claim 1, further comprising the steps of designating
2 one of the directory information trees as the currently active directory information tree
3 only when all read operations and write operations are complete with respect to that
4 directory information tree.
- 1 3. (Original) A method as recited in Claim 1, further comprising the steps of providing,
2 in the directory information tree manager, a reference to one or more old directory
3 information trees for use by a reading process that specifically requests retrieval of
4 obsolete quality of service policy information that is associated with the one or more
5 old directory trees.

1 4. (Original) A method as recited in Claim 1, further comprising:
2 creating and storing a validity designation value in association with each directory
3 information tree, in which the validity designation value indicates whether the
4 directory information tree is active, old, or to be erased;
5 retrieving the quality of service policy management information from one directory
6 information tree that has a validity designation value of "active," and only
7 during a time period within the validity period value thereof.

1 5. (Original) A method as recited in Claim 1, further comprising the steps of deleting an
2 obsolete directory information tree only after its validity period has expired.

1 6. (Original) A method as recited in Claim 4, further comprising the steps of testing the
2 validity designation value after carrying out a read operation, and verifying validity of
3 information that has been read by determining whether the validity designation value
4 is currently null.

1 7. (Original) A method as recited in Claim 1, further comprising the steps of
2 determining that one or more objects in a directory information tree has been
3 modified by a process and rewriting to the directory service only selected units of the
4 directory information tree.

1 8. (Original) A method as recited in Claim 1, wherein each directory information tree
2 comprises a policy sub-tree that includes one or more role objects, one or more
3 service template objects, and one or more policy decision point objects, and further
4 comprising the steps of determining that one or more objects in one of the directory
5 information trees has been modified by a process and rewriting to the directory
6 service only such objects, service template objects, and policy decision point objects
7 as have been modified by the process.

1 9. (Original) A method of retrieving and storing quality of service policy management
2 information using a directory service, comprising the steps of:
3 receiving a name and creation time value associated with one of a plurality of
4 directory information trees that are stored in the directory service in
5 association with a directory information tree manager;
6 receiving quality of service policy information from the one of the plurality of
7 directory information trees;
8 determining whether the name or creation time value of the one of the plurality of
9 directory information trees have changed;
10 determining that the quality of service policy information is successfully retrieved
11 only when the name or creation time value of the one of the plurality of
12 directory information trees are unchanged.

1 10. (Currently amended) A method as recited in Claim 9, further comprising the steps of
2 determining which one of the directory information trees is a currently active
3 directory information tree;
4 retrieving the quality of service policy management information from the currently
5 active directory information tree only during a time period indicated by an
6 associated within the validity period value thereof, wherein the validity period
7 value stores information that defines a time period in which a directory
8 information tree, associated with the validity period value, is valid, and
9 wherein a valid directory information tree cannot be updated or modified.

1 11. (Currently Amended) A method of retrieving and storing quality of service policy
2 management information using a directory service, comprising the steps of:
3 receiving a validity period value of one of a plurality of directory information trees
4 that are created and stored in the directory service in association with a
5 directory information tree manager, wherein the validity period value stores
6 information that defines a time period in which a directory information tree,
7 associated with the validity period value, is valid, and wherein a valid
8 directory information tree cannot be updated or modified;

9 providing, in the directory information tree manager, an active directory information
10 tree value that references a currently active directory information tree, and an
11 old directory information tree value that references a formerly active directory
12 information tree;
13 when quality of service policy management information is needed, determining which
14 one of the directory information trees is a currently active directory
15 information tree as indicated by the active directory information tree value of
16 the directory information tree manager;
17 retrieving the quality of service policy management information from the currently
18 active directory information tree only during the time period within the
19 validity period value thereof.

1 12. (Original) A method as recited in Claim 11, wherein the quality of service policy
2 information associated with each of the directory information trees comprises a sub-
3 tree of one or more quality of service policies.

1 13. (Original) A method as recited in Claim 11, further comprising the steps of:
2 providing a manager validity period value in the directory information tree manager;
3 retrieving the quality of service policy management information from the currently
4 active directory information tree only during a time period within the manager
5 validity period value.

1 14. (Original) A method as recited in Claim 11, further comprising the steps of:
2 providing a unique name value and a creation time value in each directory
3 information tree;
4 retrieving the quality of service policy information from a directory information tree
5 only when its creation time value is unchanged since a previous retrieval from
6 that directory information tree.

1 15. (Original) A method as recited in Claim 11, further comprising the steps of:
2 after retrieving the quality of service policy information,

- 3 (a) determining whether the current directory information tree is still valid based on
4 its validation period value;
5 (b) determining whether the current directory information tree has changed based on
6 its name value;
7 (c) if either determination (a) or (b) is true, then deleting the retrieved quality of
8 service policy information and restarting retrieval of the quality of service
9 policy information.

1 16. (Original) A method as recited in Claim 11, further comprising the steps of:
2 creating and storing a sub-tree of one or more quality of service policies;
3 setting the sub-tree as inactive;
4 validating consistency and error checking the sub-tree;
5 modifying an active job value of a job manager to reference the sub-tree.

1 17. (Currently amended) A method of retrieving and storing quality of service policy
2 management information using a directory service, comprising the steps of:
3 creating and storing a plurality of directory information trees that are created and
4 stored in the directory service in association with a directory information tree
5 manager;
6 when quality of service policy management information is needed, determining which
7 one of the directory information trees is a currently active directory
8 information tree;
9 receiving a validity period value of the directory information tree manager, wherein
10 the validity period value stores information that defines a time period in which
11 the currently active directory information tree is valid, and wherein a valid
12 directory information tree cannot be updated or modified;
13 if the validity period value of the directory information tree manager is currently
14 valid, then performing the steps of:
15 receiving a name value and a validity period value of a currently active
16 directory information tree; and

retrieving quality of service policy information from the active directory
information tree only during the time period indicated by the validity
period value of that active directory information tree.

18. (Currently amended) A computer-readable medium carrying one or more sequences of
instructions for retrieving and storing quality of service policy management
information using a directory service, wherein execution of the one or more sequences
of instructions by one or more processors causes the one or more processors to
perform the steps of:
receiving a validity period value of one of a plurality of directory information trees
that are created and stored in the directory service in association with a
directory information tree manager, wherein the validity period value stores
information that defines a time period in which a directory information tree,
associated with the validity period value, is valid, and wherein a valid
directory information tree cannot be updated or modified;
when quality of service policy management information is needed, determining which
one of the directory information trees is a currently active directory
information tree;
retrieving the quality of service policy management information from the currently
active directory information tree only during the time period within the
validity period value thereof.

19. (Original) A computer-readable medium as recited in Claim 18, further comprising
the steps of designating one of the directory information trees as the currently active
directory information tree only when all read operations and write operations are
complete with respect to that directory information tree.

- 1 20. (Original) A computer-readable medium as recited in Claim 18, further comprising
2 the steps of providing, in the directory information tree manager, a reference to one or
3 more old directory information trees for use by a reading process that specifically
4 requests retrieval of obsolete quality of service policy information that is associated
5 with the one or more old directory trees.
- 1 21. (Original) A computer-readable medium as recited in Claim 18, further comprising:
2 creating and storing a validity designation value in association with each directory
3 information tree, in which the validity designation value indicates whether the
4 directory information tree is active, old, or to be erased;
5 retrieving the quality of service policy management information from one directory
6 information tree that has a validity designation value of "active," and only
7 during a time period within the validity period value thereof.
- 1 22. (Currently Amended) A computer-readable medium as recited in Claim 18, further
2 comprising the steps of deleting an obsolete directory information tree only after its
3 validity period has expired.
- 1 23. (Original) A computer-readable medium as recited in Claim 22, further comprising
2 the steps of testing a validity designation value after carrying out a read operation, and
3 verifying validity of information that has been read by determining whether the
4 validity designation value is currently null.
- 1 24. (Original) A computer-readable medium as recited in Claim 18, further comprising
2 the steps of determining that one or more objects in a directory information tree has
3 been modified by a process and rewriting to the directory service only selected units
4 of the directory information tree.

1 25. (Original) A computer-readable medium as recited in Claim 18, wherein each
2 directory information tree comprises a policy sub-tree that includes one or more role
3 objects, one or more service template objects, and one or more policy decision point
4 objects, and further comprising the steps of determining that one or more objects in
5 one of the directory information trees has been modified by a process and rewriting to
6 the directory service only such objects, service template objects, and policy decision
7 point objects as have been modified by the process.

1 26. (Currently amended) An apparatus for retrieving and storing quality of service policy
2 management information using a directory service, comprising:
3 means for receiving a validity period value of one of a plurality of directory
4 information trees that are created and stored in the directory service in
5 association with a directory information tree manager, wherein the validity
6 period value stores information that defines a time period in which a directory
7 information tree, associated with the validity period value, is valid, and
8 wherein a valid directory information tree cannot be updated or modified;
9 means for determining, when quality of service policy management information is
10 needed, which one of the directory information trees is a currently active
11 directory information tree;
12 means for retrieving the quality of service policy management information from the
13 currently active directory information tree only during the time period within
14 the validity period value thereof.

1 27. (Currently amended) An apparatus for retrieving and storing quality of service policy
2 management information using a directory service, comprising:
3 a processor;
4 a network interface coupled to a managed network that receives network data from
5 one or more network devices that are in the managed network;
6 one or more sequences of stored instructions accessible to the processor and which,
7 when executed by the processor, cause the processor to carry out the steps of:

8 receiving a validity period value of one of a plurality of directory information trees
9 that are created and stored in the directory service in association with a
10 directory information tree manager, wherein the validity period value stores
11 information that defines a time period in which a directory information tree,
12 associated with the validity period value, is valid, and wherein a valid
13 directory information tree cannot be updated or modified;
14 determining, when quality of service policy management information is needed,
15 which one of the directory information trees is a currently active directory
16 information tree;
17 retrieving the quality of service policy management information from the currently
18 active directory information tree only during the time period within the
19 validity period value thereof.

1 28. (Previously presented) The method of claim 1, wherein the Directory Information
2 Trees and the Directory Information Tree Manager provide consistency control over
3 policy sub-trees that store quality of service policy information.

1 29. (Previously presented) A method comprising the steps of:
2 testing a validity designation value after carrying out a read operation,
3 wherein the validity designation value is associated with one of a plurality of
4 directory information trees that are created and stored in a directory
5 service in association with a directory information tree manager, and
6 wherein the plurality of directory information trees are associated with quality
7 of service policy information; and
8 verifying the validity of information that has been read during the read operation by
9 determining whether the validity designation value is currently null.

10 30. (Previously presented) A method as recited in Claim 29, further comprising:
11 creating and storing the validity designation value in association with each of a
12 plurality of directory information trees, in which the validity designation value
13 indicates whether the directory information tree is active, old, or to be erased;
14 retrieving quality of service policy management information from one of the plurality
15 of directory information trees in which the validity designation indicates that
16 the director information tree is "active," and only during a time period within
17 a validity period value thereof.

1 31. (Previously presented) The method of claim 29 wherein the method is part of a step of
2 retrieving and storing quality of service policy management information using a
3 directory service, comprising the steps of retrieving and storing further comprising:
4 receiving the validity period value of one of the plurality of directory information
5 trees that are created and stored in the directory service in association with a
6 directory information tree manager;
7 when quality of service policy management information is needed, determining which
8 one of the directory information trees is a currently active directory
9 information tree;
10 retrieving the quality of service policy management information from the currently
11 active directory information tree only during a time period within the validity
12 period value thereof.

1 32. (Previously presented) An apparatus comprising:
2 a machine readable medium carrying at least
3 a plurality of directory information trees associated with quality of service
4 policy information, each directory information tree includes at least a
5 policy sub-tree that has at least one or more role objects, one or more
6 service template objects, and one or more policy decision point objects,
7 wherein the one or more role objects, one or more service template
8 objects, and one or more policy decision point objects are related to the
9 quality of service information;

10 one or more sequences of stored instructions accessible to the processor and
11 which, when executed by a processor, cause the processor to carry out
12 the steps of:
13 determining that one or more objects in one of the directory information trees
14 has been modified by a process and rewriting to the directory service
15 only such objects, service template objects, and policy decision point
16 objects as have been modified by the process.